Hydraulic Testers ▪ PPC Series

The STAUFF measuring and test equipment of the PPC series are perfectly suited for measuring all relevant parameters in fluid power systems, including pressure, differential pressure, temperature, flow and rational speed. Depending on the type, they allow evaluation, storage and further processing in PCs or notebooks. They have been especially developed for the growing needs of system monitoring, troubleshooting and determining measured values in hydraulic and pneumatic systems. The application areas are broad:

- Industrial hydraulics
- Mobile, agricultural and forestry hydraulics
- Marine and offshore hydraulics
- Chemical and petrochemical industries
- Energy and air conditioning industries
- Heating and sanitary industries

The hydraulic testers of the PPC-04/2 series are distinguished by simple operation using eight buttons. They are suitable for connecting two sensors simultaneously and show the measured values as numbers on their two-line display.
The hydraulic testers of the PPC-06/08-plus series depending upon the type, provide the potential of connecting 3 or 4 sensors. They have internal memory and can not only output the measured values as numbers, they can also display them as graphs on your PC.

The PPC-06/08 series has been fully revised and replaced by the PPC-06/08-plus series. New features include the addition of a USB interface, a larger data memory, and also considerably longer operating times with the rechargeable battery. They work with the same sensor connections as the PPC-06/08/12 series. That's why connecting the PPC-06/08-plus unit with the sensors is still pretty easy.

A further development within the PPC series is the new PPC Pad. It is a result of the new demands on the hydraulic technician, who is faced with ever more complex systems. The new device increasingly blends together the areas of hydraulics and electronics. With the new CAN bus system it is ideally suited to the growing requirements in the near future. The clear and large colour display provides a good view of the measured values.

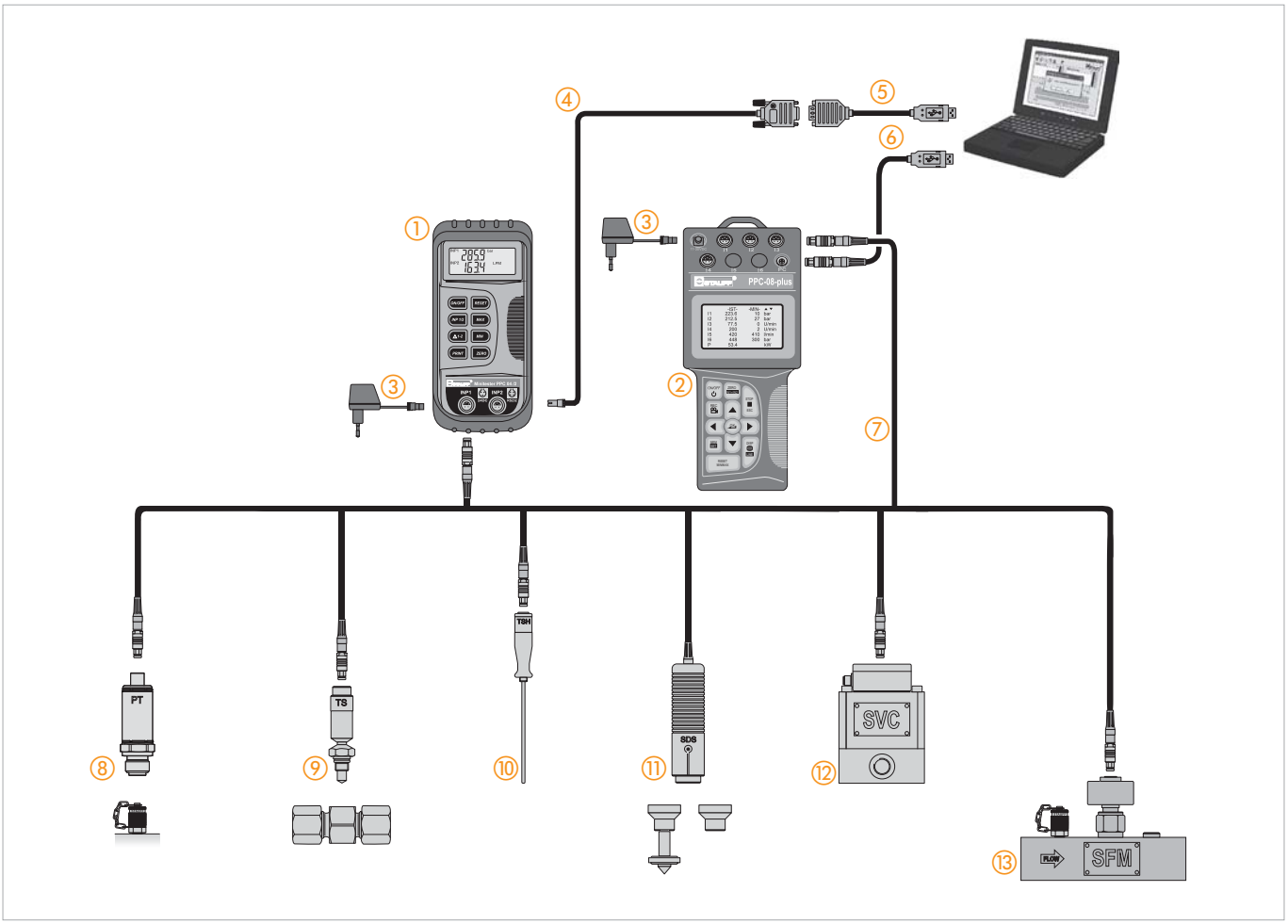
All hydraulic testers of the PPC series and their corresponding sensors are also available in a calibrated version.
A separate calibration certificate is supplied with each tester. Subsequent calibration of the hydraulic testers and sensors is also possible.
The optional and subsequent calibration must be ordered using a separate ordering code.

Hydraulic Testers ▪ PPC Series

Hydraulic Testers						
Options	**PPC-04-B/2**	**PPC-04-A/2**	**PPC-04-AP/2**	**PPC-06-plus**	**PPC-08-plus**	**PPC-Pad**
Rechargeable Battery	–	●	●	●	●	●
Battery Operation	●	–	–	–	–	–
Number of Sensor Inputs	2	2	2	3	4	max. 6+CAN
PC Interface	–	–	RS-232	USB	USB	USB / Ethernet
Online Function	–	–	●	●	●	●
Internal Memory	–	–	–	●	●	●
Programming of Automatic Measuring Tasks	–	–	–	●	●	●
Internal Trigger Function	–	–	–	●	●	●
Data Display	●	●	●	●	●	●
Graphic Display	–	–	–	●	●	●
Display Lightning	–	–	–	●	●	●
Curve Printout on Display	–	–	–	–	–	●
PC Software Kit	–	–	○	●	●	●
Pressure Measurement	●	●	●	●	●	●
Temperature Measurement	●	●	●	●	●	●
Flow Measurement	●	●	●	●	●	●
Rotational Speed Measurement	●	●	●	●	●	●
Frequency Measurement	–	–	–	●	●	●
External Trigger Function	–	–	–	●	●	●
Third-Party Sensors	–	–	–	●	●	●
Current / Voltage Adaptor	–	–	–	●	●	●
STAUFF-CAN-Sensor	–	–	–	–	–	●

○ = Optional, ● = Standard, – = not available

Hydraulic Testers ▪ PPC Series



① PPC-04/2 hydraulic tester
A maximium of 2 connecting cables for sensors can be connected at the same time.
② PPC-06-plus or PPC-08-plus hydraulic tester
A maximium of 3 or 4 connecting cables for sensors can be connected at the same time.
③ PPC-04/12-110/230V AC power supply unit (not for PPC-04-B/2)
④ PC connecting cable as a component of the PC-SET-04-SW-CAB
⑤ PPC-04/12-RS232-to-USB-CAB PC adaptor cable
⑥ PPC connecting cable as a component of the PC-SET-06/08-plus-SW-CAB (USB) PC set
⑦ PPC-04/12-CAB3 (3 m / 9.84 ft) 5-pin connecting cable, optionally with PPC-04/12-CAB5-EXT (5 m / 16.40 ft) extension cable
⑧ PPC-04/12-PT-/2 pressure sensor
⑨ PPC-04/12-TS screw-in temperature sensor with M10 x 1 connection, optionally with SGV-16S-G-C6F straight threaded pipe joint
⑩ PPC-04/12-TSH manual temperature sensor
⑪ PPC-04/12-SDS-CAB rotational speed sensor with integrated connecting cable, optionally with PPC-04/12-SKA-Contact contact adaptor or PPC-04/12-SKA-Focus focusing adaptor
⑫ PPC-04/12-SVC flow meter with integrated signal converter
⑬ PPC-04/12-SFM flow meter with integrated signal converter, for connecting pressure and temperature sensor

Calibration Certificate

All units are available as calibrated version.

Hydraulic Tester ▪ Type PPC-04/2

Two separate test inputs

Product Description

The PPC-04/2 Hydraulic Testers were designed for initial start-up, service and maintenance work on fluid power systems. Hydraulic systems are becoming more and more accurate and thus require quick, simple checking of the hydraulic key data.

- Two-line display
- 5-pin sensor input
- "ZERO" function

The PPC-04/2 can be operated simply, using eight buttons. Just like all testers of the PPC series, it is superbly suited for measuring operating pressure, peak pressure, differential pressure, media temperature, flow and rotational speed. The tester has two separate test inputs that automatically detect the connected sensors. The new two-line display now allows simultaneous display of both sensor inputs. The measuring unit can be selected during power-on at the touch of a button.
The ruggedness of the tester continues in the rubber protective coating that protects the actual tester against impacts. Voltage is supplied either by a commercially available 9 V battery (PPC-04-B/2) or from an integrated rechargeable battery (PPC-04-A/2 and PPC-04-AP/2).

Measurements taken over a lengthy period of time are possible, using a power supply (not for the PPC-04-B/2) which charges the rechargeable battery at the same time. The data printout is used for the documentation requirement within the scope of ISO 9001 and is compliant with CE.

The PPC-04/2 can be connected to a PC via an RS-232 interface through a data output (only for the PPC-04-AP/2). Connection to a USB port is possible using an optional adaptor. The PPC-04/2 software that can be ordered separately is compatible with popular PC operating systems such as Windows 95®, Windows 98®, Windows 2000®, Windows NT®, Windows XP®, Windows Vista® and Windows 7®.

It is also possible to connect the pressure sensors under load, with the equipment switched on. The temperature and volume flow sensors are to be installed in the pipelines. The rotational speed sensor is a non-contacting sensor and uses an optical mark on the rotating parts.
Measuring the differential pressure requires two pressure sensors with identical measuring ranges.

The units are also available as a complete set. Please see page D26.

Note: The hydraulic tester does not have an internal memory for measured values (except for the temporary MIN-/MAX memory)!

Technical Data

Materials
- Housing made of ABS in a rubber protective case with carrying strap and stand

Dimensions and Weight
- L/W/H: 145 x 70 x 40 mm / 5.71 x 2.76 x 1.57 in
- Weight: 330 g / .73 lbs

Measurements / Display
- Pressure: in bar and PSI
- Temperature: in °C and °F
- Volume flow: in l/min and US GPM
- Rotational speed: in RPM
- Two-line LCD display (4-digit)
  Numeral height: 8 mm / .32 in
- Data output for connection to notebook or PC (PPC-04-AP/2 only)

Power Supply
- Power supply unit 110/230 V AC (50/60 Hz) (PPC-04-A/2 and PPC-04-AP/2)
- Internal rechargeable battery 9 V / 110 mAh
- Operating time with the rechargeable battery: approx. 5 hours

Sensor Inputs (5-Pin)
- Automatic sensor detection
- Input signal: 0 ... 3 V DC (R = 470 kΩ)
- Sampling rate: 2 ms
- Accuracy: < ±0,25 % FS*

Data Output
- RS-232 interface
- Optionally with RS-232 adaptor to USB

Permissible Temperatures
- Ambient: 0 °C ... +50 °C / +32 °F ... +122 °F
- Storage: -20 °C ... +60 °C / -4 °F ... +140 °F

- Relative humidity: < 85 %
- CE certified

Protection Rating
- IP 54 protection rating: Dust protected and protected against splashing water

Order Codes

PPC-04 - B/2

① ②

① Series and Type

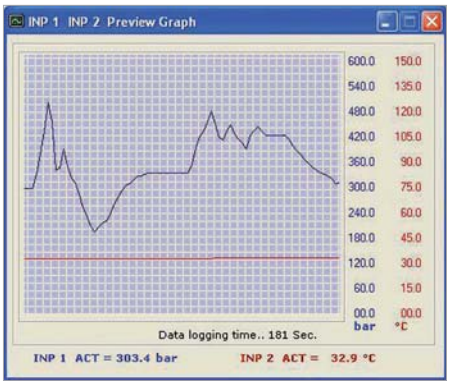
Hydraulic Tester	**PPC-04**

② Version

With battery	**B/2**
With rechargeable battery	**A/2**
With rechargeably battery and data output	**AP/2**

Software

An optional PC set is available for the PPC-04-AP/2, for connecting it to a PC or a notebook. This set contains both a PC adaptor (RS-232 connection, length: 2 m / 6.56 ft) and the corresponding PC software. The measured values can then easily be processed as a data series or a chart using Microsoft Excel®.



* FS = Full Scale

Hydraulic Tester ▪ Type PPC-06/08-plus

PPC-08-plus with 4 sensor inputs

Order Codes

PPC - 06-plus
① ②

① Series and Type

Hydraulic Tester	**PPC**

② Version

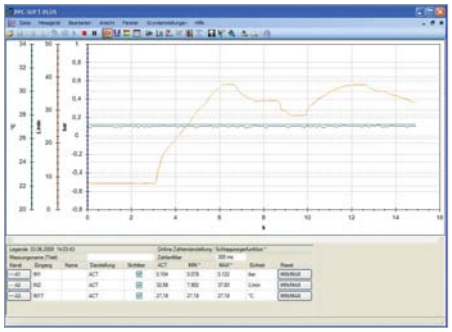
With 3 sensor inputs	**06-plus**
With 4 sensor inputs	**08-plus**

Version	No. Sensor Inputs	Integrated Data Memory for Measuring Value Points	Storable Curves
06-plus	3	1000000 Points	240000 Points
08-plus	4		

Software

A PC set, consisting of a USB connecting lead, Length 1,5 m / 4.9 ft and the corresponding PC software, is included as standard with every PPC-06-plus and PPC-08-plus.

The measured data and curves can easily be processed using Microsoft Excel® with the software.



Technical Data

Material
- Housing made of fibreglass-reinforced PA

Dimensions and Weight
- L/W/H: 235 x 106 x 53 mm / 9.25 x 4.17 x 2.09 in
- Weight: 530 g / 1.17 lbs

Measurements / Display
- Pressure: in bar and PSI
- Temperature: in °C and °F
- Volume flow: in l/min and US GPM
- Rotational speed: in RPM
- Digital LCD display: 128 x 64 Pixel
  Visible area: 72 x 40 mm / 2.84 x 1.58 in
- Automatic numeral height adjustment
  Numeral height: 6 mm / .24 in with eight-line display
- Data output for connection to notebook or PC
- 12-key membrane keyboard
- Electromagnetic compatibility (EMC):
  Emitted interference: DIN EN 50081, Part 1
  Interference immunity: DIN EN 50082, Part 2
- Auto Power Off (after 20 minutes)
- Battery charge display

Measured Data Memory
- Variable storage interval (1 ms ... 10 s) or variable storage time (2 s ... 100 h)
- Manual and automatic triggering

Power Supply
- Power supply unit: 110/230 V AC (50/60 Hz)
- Rechargeable battery charging circuit
- Internal nickel-metal hybrid rechargeable battery 7,2 V / 700 mAh
- Operating time with the rechargeable battery: approx. 8 hours

Sensor Inputs (5-Pin)
- Automatic sensor detection
- Input signal: 0 ... 3 V DC (R = 470 kΩ)
- Frequency range: 0,5 Hz ... 30 kHz
- Sampling rate: 1 ms
- Accuracy: < ±0,25 % FS*

Data Output
- Integrated USB port (USB 2.0)
- Online data transmission to a PC
  Speed individually eligible (5 ms ... 60 s)

Permissible Temperatures
- Ambient: 0 °C ... +50 °C / +32 °F ... +122 °F
- Storage: -25 °C ... +60 °C / -13 °F ... +140 °F
- Temperature error: < 0,02 % / °C

- Relative humidity: < 80 %
- CE certified
- IP 54 protection rating: Dust protected and protected against splashing water

Product Description

The PPC-06/08-plus Hydraulic Testers have been especially developed for the growing demands of system monitoring and troubleshooting in hydraulic and pneumatic systems.
The PPC-06/08 series has been fully revised and replaced by the PPC-06/08-plus series. New features include the addition of a USB interface, a larger data memory, and also considerably longer operating times with the rechargeable battery. They work with the same sensor connections as the old PPC-06/08/12 series.

- Automatic sensor detection
- Larger data memory
- Possible to record MIN-/MAX values over long periods
- Internal trigger function
- External trigger function
- Online data transmission
- Display lighting
- Programming by PC and notebook
- USB interface

The ergonomically designed housing and the LCD display, which sets automatically to the appropriate line size, now allows problem free use even under difficult environmental conditions.
The individual PPC-06-plus and PPC-08-plus testers differ in the number of sensor inputs (3-channel or 4-channel technology).
The PPC-06-plus and PPC-08-plus can measure, store and process all relevant hydraulic parameters such as pressure, differential pressure, temperature, rotational speed and flow. The comprehensive programmer options, and the internal memory capacity in particular, allow for diverse measurement and evaluation methods such as long-term measurements, trigger functions or measuring data from third-party sensors.

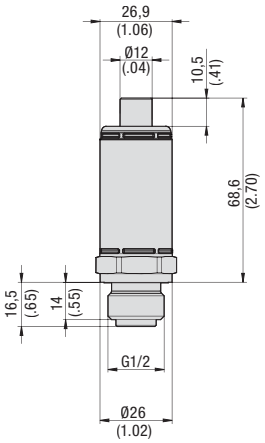
The PPC-06/08-plus devices can store up to 1000000 measuring value points and 240000 curve memory points. The stored values can be transferred using the built-in USB interface to a PC or to a notebook. The included PPC software is compatible with popular PC operating systems (Windows 95®, Windows 98®, Windows 2000®, Windows NT®, Windows XP®, Windows Vista® and Windows 7®) and permits various evaluation methods.

The automatic sensor recognition feature makes the PPC-06-plus and PPC-08-plus hydraulic testers easy to operate, and the testers can be individually configured to meet customer requirements without a great programming effort. Both hydraulic testers allow the data from third-party sensors to be measured and processed.
The units are also available as a complete set. Please see page D26.

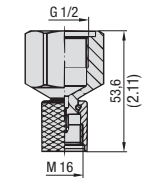
* FS = Full Scale

Pressure Sensor ▪ Type PPC-04/12-PT/2

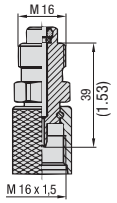
PPC-04/12-PT/2 with adaptor and cable

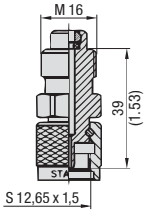


SDA20-G1/2-C6F

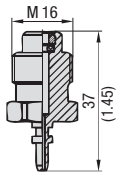


SAD20/15-P-C6F





SAD20/12-P-C6F



SAD20/10-P-C6F

Product Description

The PPC-04/12-PT/2 Pressure Sensors can be used with all hydraulic testers of the PPC series, due to their 5-Pin connection.
As an additional feature, the new generation of PPC-04/12-PT Sensors (identified with „/2“ in the name) can now also measure and display temperature (only with the PPC-06/08-plus and PPC-Pad hydraulic testers).
The STAUFF Pressure Sensors are a reliable and flexible solution for the PPC series because of their sturdy Stainless Steel design, the quick response times (< 1 ms) and the high accuracy (±0,25 % FS* typ.) with automatic sensor detection.

Note: A PPC-04/12-CAB3 (3 m / 9.84 ft) cable is needed to connect the PPC-04/12-PT/2 Pressure Sensors to the current PPC Hydraulic Testers. A PPC-04/12-CAB5-EXT (5 m / 16.40 ft) extension cable is also available as an accessory!

Note: The temperature measurement data from the PPC-04/12-PT/2 Sensors can only be displayed using the PPC-06/08-plus and PPC-Pad hydraulic testers.
The PPC-units allow the evaluation and further processing of the measured values obtained.

Technical Data

- Sturdy Stainless Steel housing (1.4301)
- FPM (Viton®) gasket
- Weight: 200 g / .44 lbs
- Suitable for gases and liquids (in the case of aggressive media, only after consultation)
- 5-Pin connection
- Pressure connection G1/2 (without adaptor)

Ambient Conditions

- Media temperature: max. +105 °C / +221 °F
- Ambient temperature: -25 °C ... +80 °C / -13 °F ... +176 °F
- Storage temperature: -20 °C ... +80 °C / -4 °F ... +176 °F
- Compensated range: -0 °C ... +85 °C / +32 °F ... +285 °F
- Load cycles (10^6): 100

Electrical Data and Output

- Input voltage: 7 ... 12 V DC
- Current consumption: 5 mA
- Output signal: 0 ... 3 V DC
- Response time: 1 ms
- Long-term stability: < 0,2 % FS* /a
- Vibration loading: IEC 68-2-6/10 ... 500 Hz
- Shock loading: IEC 68-2-29

Connection Adaptors for PPC Pressure Sensors

In addition to the PPC-04/12-PT/2 Pressure Sensors, different adaptors and adaptor sets are available that not only connect to the STAUFF Test 20 system (SDA20-G1/2-C6F) but also to the test points of the STAUFF Test 15/12/10 series (SAD20/15-P-C6F, SAD20/12-P-C6F, SAD20/10-P-C6F).

For further information please see the STAUFF Test section.

Order Codes

PPC-04/12-PT - **015/2** - **CAL**

① ② ③

① Series and Type

Pressure Sensor	**PPC-04/12-PT**

② Version

Please see table below

③ Calibration

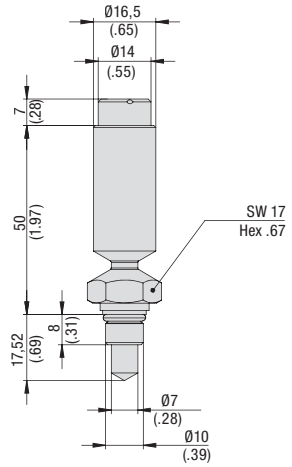
Without calibration certificate	**(none)**
With calibration certificate	**CAL**

Pressure Range and Accuracies

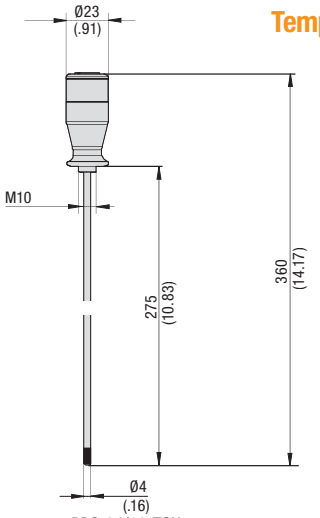
Version	Pressure Range and Accuracies							
Sensor PPC-04/12-PT-	Pressure Measuring Range ($^{bar}/_{PSI}$)	Type of Measurement	Maximum Pressure ($^{bar}/_{PSI}$)	Burst Pressure ($^{bar}/_{PSI}$)	Accuracy (±% FS*) typ.	Accuracy (±% FS*) max.	Temperature Measuring Range (°C/°F)	Accuracy Temp. Sensor(±% FS*)
015/2	-1 ... 15**	Relative pressure	30	150	0,25	0,5	-25 ... 105	1,5
	-14.5 ... 217		435	2175			-13 ... 221	
060/2	0 ... 60	Absolute pressure	120	500	0,25	0,5	-25 ... 105	1,5
	0 ... 870		1740	7251			-13 ... 221	
150/2	0 ... 150	Absolute pressure	300	900	0,25	0,5	-25 ... 105	1,5
	0 ... 2175		4351	13053			-13 ... 221	
400/2	0 ... 400	Absolute pressure	800	1200	0,25	0,5	-25 ... 105	1,5
	0 ... 5801		11603	17404			-13 ... 221	
600/2	0 ... 600	Absolute pressure	1200	1800	0,25	0,5	-25 ... 105	1,5
	0 ... 8702		17404	26106			-13 ... 221	
601/2	0 ... 600 ***	Absolute pressure	1200	2500	0,25	0,5	-25 ... 105	1,5
	0 ... 8702		17404	36259			-13 ... 221	

* FS = Full Scale
** 0 ... 15 bar (0 ... 217 PSI) when used with the PPC-04/2 series
*** Pressure peaks up to 1000 bar / 14503 PSI
Dimensional drawings: All dimensions in mm (in).

Temperature Sensor ▪ Type PPC-04/12-TS /-TSH



PPC-04/12-TS



PPC-04/12-TSH

Temperature sensors TS and TSH with cables

Order Codes

PPC-04/12 - TS - CAL
① ② ③

① Series and Type

Temperatur Sensor	**PPC-04/12**

② Version

Screw-in	**TS**
Rod-type	**TSH**

③ Calibration

Without calibration certificate	**(none)**
With calibration certificate	**CAL**

Technical Data

Materials
- Housing (TS): Steel (C15K)
- Gaskets (TS): FPM (Viton®)
- Rod (TSH): Stainless Steel 1.4304
- Handle (TSH): Delrin
- Weight (TS): 100 g / .22 lbs
- Weight (TSH): 120 g / .26 lbs
- Measurement medium: liquids (consult STAUFF for use with aggressive media)
- 5-Pin connection
- Connection:
  a) STAUFF Test connection SGV-16S-G-C6F in the pipeline (TS, see figure)
  b) Screw-in thread M10 x 1 (TS, see figure)
  c) Screw-in thread M10 (TSH)

Ambient Conditions
- Media temperature: max. +125 °C / +257 °F
- Ambient temperature: -25 °C ... +70 °C / -13 °F ... +158 °F
- Storage temperature: -25 °C ... +80 °C / -13 °F ... +176 °F

Measuring Range
- Measuring range: -25 °C ... +125 °C / -13 °F ... +257 °F
- Operating pressure (TS): 630 bar / 9137 PSI
- Maximum pressure (TS): 800 bar / 11603 PSI
- Burst pressure (TS): 1200 bar / 17404 PSI
- Accuracy: ±1,5 °C

Electrical Data and Output
- Output signal: 0 ...3 V DC
- Input signal: 7 ...12 V DC
- Response time $T_{0.9}$ (TS): approx. 13,5 s
- Response time $T_{0.9}$ (TSH): approx. 9,1 s
- IP 54 protection rating: Dust protected and protected against splashing water (TS)

Product Description

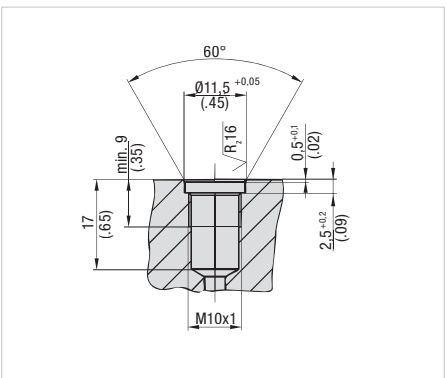
The PPC-04/12-TS Screw-in Temperature Sensor measures current temperatures directly in the pipeline and is compatible with the PPC-04/12-SFM Flow Turbine (see page D21) and the SGV-16S-G-C6F straight threaded joint.

The new PPC-04/12-TSH Rod-type Temperature Sensor is especially designed to determine the media temperatures in tanks and containers.

Both sensors can measure media temperatures without problems up to +125 °C / +257 °F.

Note: A PPC-04/12-CAB3 (3 m / 9.84 ft) cable is needed to connect the PPC-04/12-TS or the PPC-04/12-TSH Temperature Sensors to the current PPC hydraulic testers.
A PPC-04/12-CAB5-EXT (5 m / 16.40 ft) extension cable is also available as an option!

Screw-in Hole PPC-04/12-TS

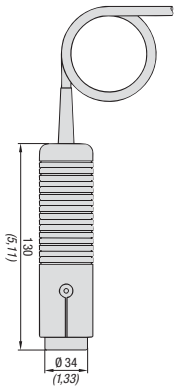


SGV-16S-C6F with PPC-04/12-TS

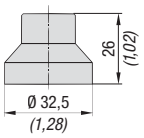
For information on SGS-16-G-C6F please see the STAUFF Test section.

* FS = Full Scale
Dimensional drawings: All dimensions in mm (in).

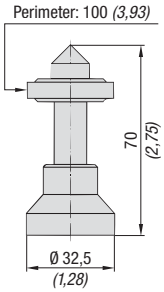
Rotational Speed Sensor ▪ Type PPC-04/12-SDS-CAB



PPC-04/12-SDS-CAB



PPC-04/12-SFA-Focus Adaptor



PPC-04/12-SKA-Contact Adaptor

Product Description

The PPC-04/12-SDS-CAB Rotational Speed Sensor allows non-contact speed measurement of rotating components. The sensor is based on an opto-electrical measurement principle that determines the rotational speed with high accuracy using a reflecting strip on the shaft.

The contact rotational speed measurement is obtained by using a contact adaptor that is mounted to the sensor, and which makes contact with the rotating component during measurement.
This also produces high-accuracy measurement results. In the case of especially small areas, using the focusing adaptor facilitates measurement.

Technical Data

- Material: ABS
- Weight: 230 g / .51 lbs
- 5-Pin connection
- Both contacting and non-contacting measurement possible
- Type of measurement: Optical, red LED

Ambient Conditions
- Ambient temperature: 0 °C ... +70 °C / +32 °F ... +158 °F

Measuring Range
- Measuring range: 20 ... 10000 RPM
- Measuring distance: 25 ... 500 mm (1 ... 20 in)
- Measuring angle: ±45 °C
- Accuracy: < ±0,5 % FS*
- Resolution: ±5 RPM

Electrical Data and Output
- Output signal: 0 ... 3 V DC
- Input signal: 7 ...12 V DC

Note: We recommend not extending the 2 m / 6.56 ft permanent cable connection provided on the sensor!

Application Examples

Fig. 1 -
Contacting rotational speed measurement with the contact adaptor.

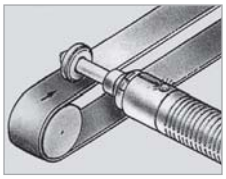


Fig. 2 -
End face rotational speed measurement with the contact adaptor

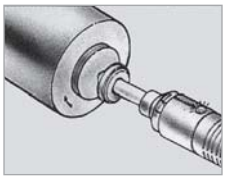
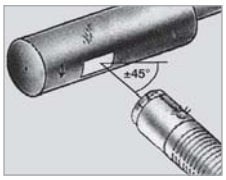


Fig. 3 -
Rotating shaft / non-contacting rotational speed measurement using the focusing adaptor and marking strip



Order Codes

PPC-04/12-SDS-CAB - CAL
① ②

① Series and Type

Rotational Speed Sensor	**PPC-04/12-SDS-CAB**

② Calibration

Without calibration certificate	**(none)**
With calibration certificate	**CAL**

Order Codes

Focus Adaptor

PPC-04/12-SFA-focus adaptor
①

① Series and Type

Focus Adaptor	**PPC-04/12-SFA-focus adaptor**

Contact Adaptor

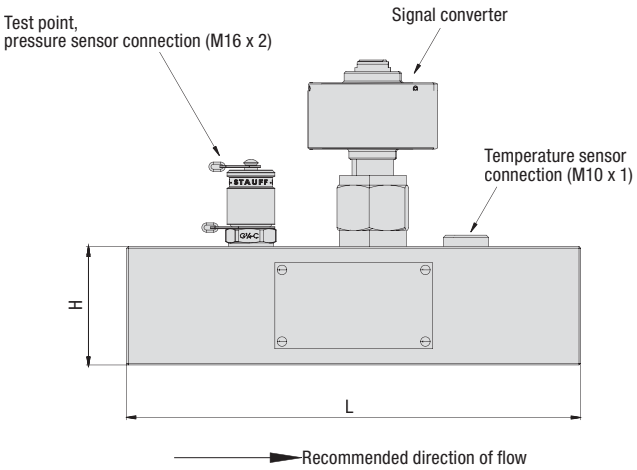
PPC-04/12-SKA-contact adaptor
①

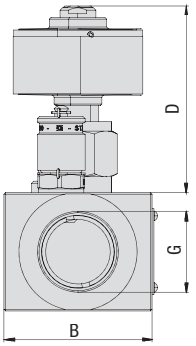
① Series and Type

Contact Adaptor	**PPC-04/12-SKA-contact adaptor**

* FS = Full Scale
Dimensional drawings: All dimensions in mm (in).

Flow Turbine ▪ Type PPC-04/12-SFM





Order Codes

PPC-04/12 - SFM-015 - CAL

① ② ③

① Series and Type

Flow Turbine	**PPC-04/12**

② Version

1 ... 15 l/min / .27 ... 3.90 US GPM	**SFM-015**
3 ... 60 l/min / .79 ... 15.90 US GPM	**SFM-060**
5 ... 150 l/min / 1.32 ... 39.60 US GPM	**SFM-150**
8 ... 300 l/min / 2.11 ... 79.00 US GPM	**SFM-300**
15 ... 600 l/min / 3.96 ... 158.00 US GPM	**SFM-600**

③ Calibration

Without calibration certificate	**(none)**
With calibration certificate	**CAL**

UNF version available on request.

Technical Data

Materials
- Housing: Aluminium (black anodised)
- Gaskets: FPM (Viton®)

- 5-Pin connection
- Pressure measurement connection: SMK20 (M16 x 2)
- Temperature measurement connection: M10 x 1 (standard screw plug)

Ambient Conditions
- Media temperature: -20 °C ... +90 °C / -4 °F ... +194 °F
- Ambient temperature: -10 °C ... +50 °C / +14 °F ... +122 °F
- Storage temperature: -20 °C ... +80 °C / -4 °F ... +176 °F
- Permissible particle size: <10 Micron for SFM-015, <25 Micron for others
  Note: To ensure the permissible particle size the use of a filter in front of the Flow Turbine is recommended.
- Viscosity range: 10 ... 100 cSt

Electrical Data and Output
- Response time: 50 ms

Process Connection
- Please see table below

Product Description

The PPC-04/12-SFM Flow Turbine is permanently installed in the pipeline.The oil flow rotates the internal axial turbine. The frequencies generated are processed by digital electronics (a signal converter). Flow effects causing interference are compensated in this process.
The signal converter is now directly integrated into the PPC-04/12-SFM Flow Turbine. This allows even simpler operation and supports permanent coupling of the turbine and signal converter components that are matched to one another.

The new turbine also improves the response times (from previously 400 ms to 50 ms) and increases the measuring accuracy.

The PPC-04/12-SFM Flow Turbine is available in five versions for various flow speeds.
A pressure sensor (see page D18) can be connected in parallel to the flow turbine by way of the integrated test point.
In addition, the oil temperature can also be measured using the temperature sensor connection (see page D19).

In general, the PPC-04/12-SFM Flow Meter can handle flows in either direction. The specified technical data and the calibration (available as an option) apply only when the flow through the flow meter matches the recommended flow direction.
A double-headed arrow is shown on the nameplate of the PPC-04/12-SFM. The thicker end of the double-headed arrow specifies the recommended direction of flow.

Note:A PPC-04/12-CAB3 (3 m / 9.84 ft) cable is needed to connect the PPC-04/12-SFM Flow Meter to the current PPC hydraulic testers.
A PPC-04/12-CAB5-EXT (5 m / 16.40 ft) extension cable is also available as an option!

Dimensions and Measuring Range

Version	Measuring Range						Dimension (mm/in)						
Flow Turbine PPC-04/12-	Measuring Range (l/min / US GPM)	Max. Flow (l/min / US GPM)	Operating Pressure (bar / PSI)	Max. Pressure (bar / PSI)	Accuracy (at 21 cSt)	Max. Pressure Drop (at FS*) (bar / PSI)	G ** (BSP)	G (UNF)	B	D	L	H	Weight (g / lbs)
SFM-015	1 ... 15	16,5	350	420	±1 (% FS*)	1,5	G1/2	3/4–16	37	73	136	37	650
	.27 ... 3.90	4.4	5076	6091		21.8			1.46	2.87	5.35	1.46	1.4
SFM-060	3 ... 60	66	350	420	±1 (% of the displayed value)	1,5	G3/4	1-1/16–16	62	75	190	50	750
	.79 ... 15.90	17.4	5076	6091		21.8			2.44	2.95	7.48	1.97	1.6
SFM-150	5 ... 150	165	350	420	±1 (% of the displayed value)	1,5	G3/4	1-1/16–16	62	75	190	50	750
	1.32 ... 39.60	43.6	5076	6091		21.8			2.44	2.95	7.48	1.97	1.6
SFM-300	8 ... 300	330	350	420	±1 (% of the displayed value)	4	G1	1-5/16–16	62	79	190	50	1200
	2.11 ... 79.00	87.2	5076	6091		58			2.44	3.11	7.48	1.97	2.6
SFM-600	15 ... 600	660	290	348	±1 (% of the displayed value)	5	G1-1/4	1-5/8–12	62	69	212	75	1800
	3.96 ... 158.00	174.4	4206	5047		72.5			2.44	2.72	8.35	2.95	4

* FS = Full Scale
** Standard option
Dimensional drawings: All dimensions in mm (in).

Gear Flow Meter ▪ Type PPC-04/12-SVC

Product Description

The PPC-04/12-SVC Gear Flow Meter is permanently installed in the pipeline of the hydraulic system. Highly accurate, low-noise flow measurements can be performed with this meter because of a very accurate gear pair.
A wide range of viscosities can be handled and even values for aggressive media (brakefluids, Skydrole, biodegradable lubricants, isocyanates, greases, etc.) can be measured by using different gaskets.

The PPC-04/12-SVC Gear Flow Meter is available in four versions (up to 300 l/min, 79 US GPM) and is resistant to pressures up to 400 bar / 5801 PSI or 315 bar / 4568 PSI.

The PPC-04/12-SVC Gear Flow Meter always includes a connection plate and a signal converter (both already assembled).

The specified engineering values and the calibration available optionally apply only if the PPC-04/12-SVC Flow Meter is installed in the recommended direction of flow (from A to B). Appropriate markings are engraved on the flow meter.

Technical Data

Materials
- Housing: GGG 40
- Gaskets: FPM (Viton®)

- 5-Pin connection
- Response time: 400 ms

Ambient Conditions and Measuring Range
- Max. media temp.: +110 °C / +230 °F
- Ambient temperature: +10 °C ... +50 °C / +50 °F ... +122 °F
- Storage temperature: -20 °C ... +80 °C / -4 °F ... +176 °F
- Permissible particle size: < 25 Micron
- Viscosity range: see the charts

Process Connections
- Please see table on page D23

Note:A PPC-04/12-CAB3 (3 m / 9.84 ft) cable is needed to connect the PPC-04/12-SVC flow meter to the current PPC hydraulic testers.
A PPC-04/12-CAB5-EXT (5 m / 16.40 ft) extension cable is also available as an option!

Order Codes

PPC-04/12 - SVC-015 - CAL
① ② ③

① Series and Type

Gear Flow Meter	**PPC-04/12**

② Version

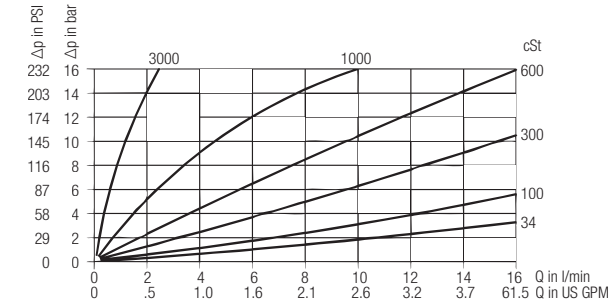
0,2 ... 15 l/min / .05 ... 3.90 US GPM	**SVC-015**
0,4 ... 60 l/min / .10 ... 15.90 US GPM	**SVC-060**
0,6 ... 150 l/min / .20 ... 39.60 US GPM	**SVC-150**
1 ... 300 l/min / .30 ... 79 US GPM	**SVC-300**

③ Calibration

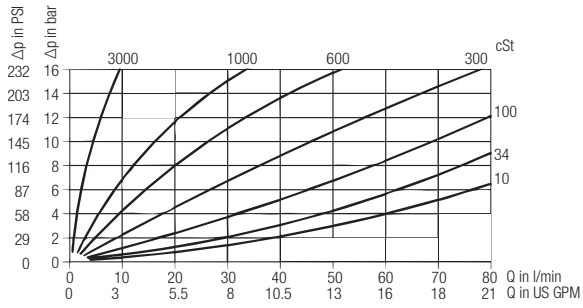
Without calibration certificate	**(none)**
With calibration certificate	**CAL**

Pressure Drop Curves / Viscosity Curves

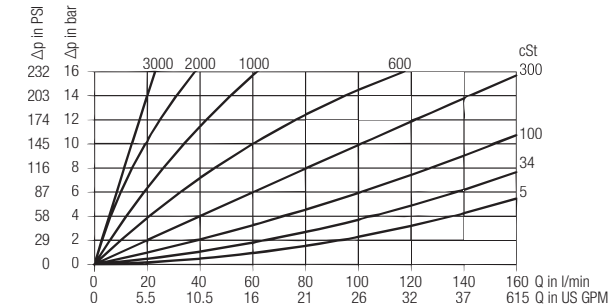
PPC-04/12-SVC-015 P-Viscosity



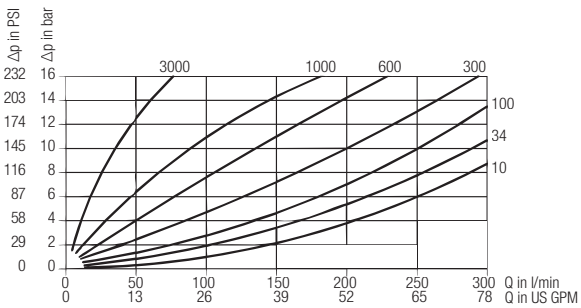
PPC-04/12-SVC-060 P-Viscosity



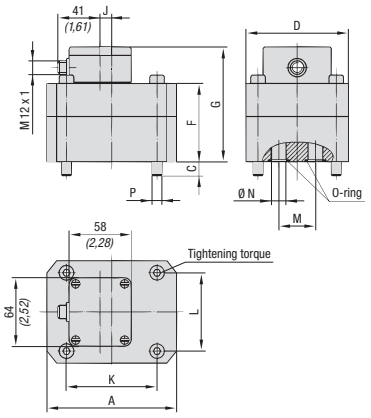
PPC-04/12-SVC-150 P-Viscosity



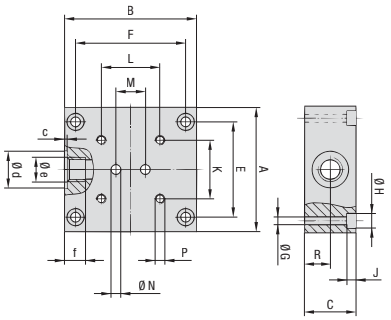
PPC-04/12-SVC-300 P-Viscosity



Gear Flow Meter ▪ Type PPC-04/12-SVC



Flowmeter



Connection Plate

Measuring Ranges

Version	Measuring Ranges						
Flow Meter PPC-04/12-	Measuring Range (l/min / US GPM)	Maximum Flow (l/min / US GPM)	Operating Pressure (bar / PSI)	Maximum Pressure (bar / PSI)	Accuracy (at 21 cSt)	Maximum Pressure Drop (at FS*) (bar / PSI)	Total Weight (kg / lbs)
SVC-015	0,2 ... 15	16,5	400	480	±0,5 (% FS*)	see the chart	3,8
	.05 ... 3.90	4.40	5800	7300			8
SVC-060	0,4 ... 60	66	400	480	±0,5 (% FS*)	see the chart	8,1
	.10 ... 15.90	17.40	5800	7300			17.9
SVC-150	0,6 ... 150	165	315	375	±0,5 (% FS*)	see the chart	23
	.20 ... 39.60	43.60	4570	5440			50.7
SVC-300	1 ... 300	330	315	375	±0,5 (% FS*)	see the chart	27
	.30 ... 79	87.20	4570	5440			59.5

Flow Meter Dimensions

Version	Dimensions (mm / in)												
Flow Meter PPC-04/12-	A	C	D	F	G	J	K	L	M	N	P	Torque [Nm]	Weight (kg / lbs)
SVC-015	85	13	60	57	94	-	70	40	20	9	M6	14	2
	3.35	.51	2.36	2.24	3.70		2.76	1.57	.79	.35			4.4
SVC-060	120	13	95	72	109	10,5	84	72	35	16	M8	35	5,2
	4.72	.51	3.74	2.83	4.29	.41	3.31	2.83	1.38	.63			11.4
SVC-150	170	18	120	89	140	46,5	46	95	50	25	M12	120	9
	6.69	.71	4.72	3.50	5.51	1.83	1.81	3.74	1.97	.98			19.8
SVC-300	170	22	120	105	142	40	46	95	50	25	M12	120	13
	6.69	.87	4.72	4.13	5.59	1.57	1.81	3.74	1.97	.98			28.7

Connection Plate Dimensions

Version	Dimensions (mm / in)																		
Flow Meter PPC-04/12-	A	B	C	E	F	G	H	J	K	L	M	N	P	R	c	d	e	f	Weight (kg / lbs)
SVC-015	85	90	35	65	76	7	11	7	70	40	20	6,5	M6 x 14	17	0,7	25	G3/8 BSP	13	1,8
	3.35	3.54	1.38	2.56	2.99	.28	.43	.28	2.76	1.58	.79	.26	M6 x .55	.67	.03	.98		.51	2.7
SVC-060	100	120	37	80	106	7	11	7	84	72	35	12	M8 x 18	17,5	0,7	29	G1/2 BSP	15	2,9
	3.94	4.72	1.46	3.15	4.17	.28	.43	.28	3.31	2.83	1.38	.47	M8 x .71	.69	.03	1.14		.59	5.4
SVC-150	160	165	80	140	145	9	15	9	46	95	50	25	M12 x 28	28,5	1	42	G1 BSP	19	14
	6.30	6.50	3.15	5.51	5.71	.35	.59	.35	1.81	3.74	1.97	.98	M12 x 1.10	1.12	.04	1.65		.75	37.5
SVC-300	160	165	80	140	145	9	15	9	46	95	50	25	M12 x 28	28,5	1	42	G1 BSP	19	14
	6.30	6.50	3.15	5.51	5.71	.35	.59	.35	1.81	3.74	1.97	.98	M12 x 1.10	1.12	.04	1.65		.75	37.5

*FS = Full Scale
Dimensional drawings: All dimensions in mm (in).

Miscellaneous Measurements (only for PPC-06/08-plus and PPC Pad)

Characteristics

In addition to pressure, temperature, rotational speed and flow measurements, the PPC-06/08-plus Hydraulic Testers can measure and evaluate different signals from other or third-party sensors.
The following connecting adaptors are available for these tasks:

- Current /Voltage Adaptor: PPC-06/12-A/V-A adaptor
- External Trigger Adaptor: PPC-06/12-TR-A adaptor

ATTENTION! None of the two adaptors is suitable for use with the PPC-04/2.

Current / Voltage Adaptor

Measuring electrical signals or signals from a third-party sensor (e.g. 4 ... 20 mA, 0 ... 10 V, ...) with the PPC-06/12-A/V-A adaptor.

The PPC-06/12-A/V-A Current / Voltage Adaptor is used, for example, for measuring current at proportional valves or for determining the switching states of motors or pumps and to evaluate and process measurements from third-party sensors. Typical applications are the generation and measurement of a force-distance graph or torque-flow characteristic curves.
The following input signals can be processed by this adaptor:

- Electric currents up to 4 A DC
- Electric voltages up to 48 V DC

The measured data are transmitted directly to the PPC-06/08-plus or PPC Pad hydraulic tester by a permanent cable connection.

Order Code

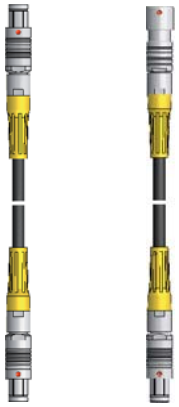
PPC-06/12-A/V-A adaptor

①

① Series and Type

Current / Voltage Adaptor	**PPC-06/12-A/V-A adaptor**

Cables / Adaptors / Accessories



PPC-04/12-CAB3 and PPC-04/12-CAB5-EXT

PPC-04/12-U5P-S4P adaptor

PPC-04/12-CAB2-U4P-S5P cable

PC connecting cable as a component of the PC-SET PPC-04-SW-CAB

PC connecting cable as a component of the PPC-SET PPC-06/08-PLUS-SW-CAB

PPC-04/12-R232-to-USB-CAB PC adaptor cable

Characteristics

A number of cables, adaptors and accessories are also available. With these items, you may customize your hydraulic tester to your needs or ensure continued use of old sensors or measuring equipment. The following items are available for this purpose:

PPC-04/12-CAB3 Cable and PPC-04/12-CAB5-EXT Cable

A PPC-04/12-CAB3 cable is required to connect the sensors to the current hydraulic testers of the PPC-04/2, PPC-06/08-plus series or PPC Pad. The cable comes with a 5-pin push/pull connection at each end and has a length of 3 m / 9.84 ft.

Note: This cable cannot be used with older hydraulic testers and/or sensors (with the 4-pin connection)!
The PPC-04/12-CAB5-EXT cable has a length of 5 m / 16 ft.
Note: Please keep in mind that it is generally recommended not to exceed a total cable length of 8 m / 26.25 ft!

PPC-04/12-U5P-S4P Adaptor

It is no longer possible to use the old 4-pin measuring sensors when converting the PPC-04 series (sensors and hydraulic testers) to the current version using 5-pin connections without suitable adaptors. The simple and easy solution to this is the PPC-04/12-U5P-S4P adaptor.
The adaptor has a 5-pin connection (connecting to the current PPC-04/2, PPC-06/08-plus hydraulic tester or PPC Pad) at one end and a 4-Pin push/pull connector (for connecting an older sensor) at the other end.

PPC-04/12-CAB2-U4P-S5P Cable

The PPC-04/12-CAB2-U4P-S5P cable is intended for using current sensors (5-pin connection) with older hydraulic testers of the PPC-04 series (without the "/2" in the name, with the 4-pin sensor input). This adaptor cable has a length of 2 m / 6.56 ft, a 4-Pin connection (for connecting to the old PPC-04 hydraulic tester) on one end and a 5-pin push/pull connector (for connecting to the current measuring sensor) on the other end.

Order Codes

PPC-04/12-CAB3

① Series and Type

Standard Connecting Cable for Measuring Sensor	**PPC-04/12-CAB3**
Extension Cable	**PPC-04/12-CAB5-EXT**

Order Code

PPC-04/12-U5P-S4P adaptor

① Series and Type

Adapting older Sensors to current Hydraulic Testers	**PPC-04/12-U5P-S4P adaptor**

Order Code

PPC-04/12-CAB2-U4P-S5P

① Series and Type

Adapting current Sensors to older Measuring Equipment	**PPC-04/12-CAB2-U4P-S5P**

PC-SET PPC-04-SW-CAB

It is possible to connect the PPC-04-AP/2 hydraulic tester to a PC or notebook. The set contains one PC cable with RS-232 connection (2 m / 6.56 ft) and the corresponding PC software. The PC-SET PPC-04-SW-CAB is only suitable for the PPC-04-AP/2 (to be ordered optionally) because the other two testers of the PPC-04/2 series do not have a data output.

PC-SET PPC-06/08-PLUS-SW-CAB

A PC set, consisting of a USB connecting lead, length 1,5 m / 4.92 ft and the corresponding PC software.
Note: The appropriate PC set is automatically included when purchasing a PPC-06/08-plus or PPC-Pad hydraulic tester.

PPC-04/12-R232-to-USB-CAB Adaptor

A suitable PC cable (PPC-Set PPC-04-SW-CAB) is available for connecting a hydraulilc tester of the PPC series to a PC. As standard, this cable is equipped with a connection for the RS-232 interface. For connection to a USB port, the PPC-04/12-RS232-to-USB-CAB adaptor is also available. The cable has a length of 1 m / 3,3 ft.

Order Code

PC-SET PPC-04-SW-CAB

① Series and Type

PC Set	**PC-SET PPC-04-SW-CAB**

Order Code

PC-SET PPC-06/08-plus-SW-CAB

① Series and Type

PC Set	**PPC-SET PPC-06/08-PLUS-SW-CAB**

Order Code

PPC-04/12-RS232-to-USB-CAB

① Series and Type

Adaptor Cable	**PPC-04/12-RS232-to-USB-CAB**

Hydraulic Tester ▪ Type PPC Complete System

Complete System PPC-04/2

Complete System PPC-06/08-plus

Product Description

PPC complete systems are assembled in different versions according to customer wishes. The complete systems are supplied in a handy case with individually designed pockets/ sections and have space for the components listed beside.

Components

Standard option PPC-04/2 complete system

- 1x PPC-04/2 hydraulic tester
- 1x Power supply unit
- Up to 3 pressure sensors with installed adaptor for STAUFF Test 20 (M16 x 2)
- Up to 2 connecting cables (3 m / 9.84 ft)
- 1x TS temperature sensor, with installed SGV-16S-G-C6F (optional)
- 3x SAD adaptors for the STAUFF Test 15/12/10 series (standard for all PPC complete systems)
- 1x Operating instructions (multilingual) on CD

Standard option PPC-06/08-plus complete system

- 1x PPC-06-plus or PPC-08-plus hydraulic tester
- 1x Power supply unit
- Up to 3 pressure sensors with installed adaptor for STAUFF Test 20 (M16 x 2)
- Up to 3 connecting cables (3 m / 9.84 ft)
- 1x TS temperature sensor, with installed SGV-16S-G-C6F (optional)
- 3x SAD adaptors for the STAUFF Test 15/12/10 series (standard for all PPC complete systems)
- 1x Printed user manual (German and English)
- 1x User manual (multilingual) on CD
- 1x PC software for the PPC-06/08-plus
- 1x PC connecting cable

Note: Please consult STAUFF for calibrated version.

Order Codes

PPC - 04-AP-SET - 2 - T - 015 / 060 / 000

① ② ③ ④ ⑤ ⑥ ⑦

① Series and Type

STAUFF Hydraulic Tester	**PPC**

② Version

2 Sensor inputs, without internal data memory, battery-operated	**04-B-SET**
2 Sensor inputs, without internal data memory, with rechargeable battery, power supply unit, without data output	**04-A-SET**
2 Sensor inputs, without internal data memory, with rechargeable battery, power supply unit and data output	**04-AP-SET**
3 Sensor inputs, including PC software and PC connecting cable	**06-SET**
4 Sensor inputs, including PC software and PC connecting cable	**08-SET**

③ Number of Pressure Sensors

With one pressure sensor	**1**
With two pressure sensors	**2**
With three pressure sensors	**3**

④ Temperature Sensor

Without TS temperature sensor with SGV	**(none)**
With TS temperature sensor with SGV	**T**

⑤ Pressure Range and Pressure Sensor

First pressure sensor	**see table**

⑥ Pressure Range and Pressure Sensor

Second pressure sensor	**see table**

⑦ Pressure Range and Pressure Sensor

Third pressure sensor	**see table**

Pressure Ranges and Pressure Sensor

Pressure Range	Pressure Sensor		
000	When ordering a complete system with one or two pressure sensors, specify „000“ for the pressure range of the second and / or third sensors.		
015 060 150 400 600 601	Pressure range first pressure sensor	Pressure range second pressure sensor	Pressure range third pressure sensor
e.g.	**015** (15 bar PT)	**060** (60 bar PT)	**000** (0 bar PT)
Please keep in mind that two pressure sensors with identical measuring ranges are necessary for differential pressure measurements.			

Hydraulic Test Equipment

Group	Description	Order Codes	Page
1. Hydraulic Tester PPC-04/2	Hydraulic Tester PPC-04-B/2 with 2 sensor inputs, without data memory, with battery	**PPC-04-B/2**	D16
	Hydraulic Tester PPC-04-A/2 with 2 sensor inputs, without data memory, including rechargeable battery and power supply unit (110/230 V AC)	**PPC-04-A/2**	D16
	Hydraulic Tester PPC-04-AP/2 with 2 sensor inputs, without data memory, including rechargeable battery and power supply unit (110/230 V AC) and data output (without PC set)	**PPC-04-AP/2**	D16
2. Hydraulic Tester PPC-06/08-plus	Hydraulic Tester PPC-06-plus with 3 sensor inputs, including PC software and PC connecting cable, including power supply unit	**PPC-06-plus**	D17
	Hydraulic Tester PPC-08-plus with 4 sensor inputs, including PC software and PC connecting cable, including power supply unit	**PPC-08-plus**	D17
3. Pressure Measurement (for connecting and extension cables for measuring transmitters, see item 8)	**Pressure Sensor G 1/2** (without connecting cable)		
	Pressure range from -1 ... 15 bar / -14.5 ... 217 PSI relative pressure *	**PPC-04/12-PT-015/2**	D18
	Pressure range from 0 ... 60 bar / 0 ... 870 PSI absolute pressure	**PPC-04/12-PT-060/2**	D18
	Pressure range from 0 ... 150 bar / 0 ... 2175 PSI absolute pressure	**PPC-04/12-PT-150/2**	D18
	Pressure range from 0 ... 400 bar / 0 ... 5801 PSI absolute pressure	**PPC-04/12-PT-400/2**	D18
	Pressure range from 0 ... 600 bar / 0 ... 8702 PSI absolute pressure	**PPC-04/12-PT-600/2**	D18
	Pressure range from 0 ... 600 bar / 0 ... 8702 PSI absolute pressure **	**PPC-04/12-PT-601/2**	D18
	Connection Adaptors		
	Adaptor G 1/2 to M16 x 2 (STAUFF Test 20)	**SDA20-G1/2-C6F**	D18
	Adaptor M 16 x 2 to M16 x 1,5 (STAUFF Test 20 to STAUFF Test 15)	**SAD20/15-P-C6F**	D18
	Adaptor M 16 x 2 to S12,65 x 1,5 (STAUFF Test 20 to STAUFF Test 12)	**SAD20/12-P-C6F**	D18
	Adaptor M 16 x 2 to plug-in (STAUFF Test 20 to STAUFF Test 10)	**SAD20/10-P-C6F**	D18
4. Temperature Measurement (for connecting and extension cables for measuring transmitters, see item 8	Temperature Sensor -25 °C ... +125 °C / -13 °F ... +257 °F for pipeline installation	**PPC-04/12-TS**	D19
	Rod-type Temperature Sensor -25 °C ... +125 °C / -13 °F ... +257 °F for tank /container measurements	**PPC-04/12-TSH**	D19
	Straight threaded Adaptor with M10 x 1 connection (for the PPC-04/12-TS)	**SGV-16S-G-C6F**	D19
5. Rotational Speed Measurement	Rotational Speed Sensor with integrated connecting cable 2 m / 6.56 ft	**PPC-04/12-SDS-CAB**	D20
	Contact Adaptor	**PPC-04/12-SKA-contact adaptor**	D20
	Focusing Adaptor	**PPC-04/12-SFA-focus adapter**	D20
6. Flow Measurement (for connecting and extension cables for measuring transmitters, see item 8)	**SFM Flow Meters with Integrated Signal Converter**		
	Measuring range from 1 ... 15 l/min / .3 ... 3.9 US GPM	**PPC-04/12-SFM-015**	D21
	Measuring range from 4 ... 60 l/min / 1 ... 15.9 US GPM	**PPC-04/12-SFM-060**	D21
	Measuring range from 6 ... 150 l/min / 1.6 ... 39.6 US GPM	**PPC-04/12-SFM-150**	D21
	Measuring range from 10 ... 300 l/min / 2.7 ... 79 US GPM	**PPC-04/12-SFM-300**	D21
	Measuring range from 20 ... 600 l/min / 5.3 ... 158 US GPM	**PPC-04/12-SFM-600**	D21
	SVC Flow Meters with Signal Converter and Connecting Plate		
	Measuring range from 0,2 ... 15 l/min / .05 ... 3.9 US GPM	**PPC-04/12-SVC-015**	D22
	Measuring range from 0,4 ... 60 l/min / .1 ... 15.9 US GPM	**PPC-04/12-SVC-060**	D22
	Measuring range from 0,6 ... 150 l/min / .2 ... 39.6 US GPM	**PPC-04/12-SVC-150**	D22
	Measuring range from 1 ... 300 l/min / .3 ... 79 US GPM	**PPC-04/12-SVC-300**	D22
7. Miscellaneous Measurements (only PPC-06/08-plus and PPC-Pad)	Current/Voltage/ Third-party Sensor Adaptor (up to 4 A DC / 48 V DC)	**PPC-06/12-A/V-A adaptor**	D24
8. Connecting Cables for measuring transmitters without integrated cable, extension cable or adapter	Connecting cable 3 m / 9.84 ft (5-Pin connection on both ends)	**PPC-04/12-CAB3**	D25
	Extension cable 5 m / 16.40 ft (5-Pin connection on both ends)	**PPC-04/12-CAB5-EXT**	D25
	Adaptor cable from old (4-Pin) sensors to current (5-Pin) hydraulic testers	**PPC-04/12-U5P-S4P adaptor**	D25
	Adaptor cable from current (5-Pin) sensors to older (4-Pin) hydraulic testers	**PPC-04/12-CAB2-U4P-S5P**	D25
9. PC Connection and Software	PC software and PC adaptor for PPC-04/2 (RS-232 connection)	**PC-SET PPC-04-SW-CAB**	D25
	PC software and USB connection lead for PPC-06/08-plus	**PC-SET PPC-06/08-plus-SW-CAB**	D25
	Adaptor cabel RS-232 to USB for PPC	**PPC-04/12-RS232-to-USB-CAB**	D25
10. Accessories and Spare Parts	Power supply unit (110 / 230 V AC) for PPC-04/2, PPC-06/08-plus	**PPC-04/12-110V/230V**	D26
	PPC-04 case (with custom insert)	**PPC-04 case**	D26
	PPC-06/08-plus case (with custom insert)	**PPC-06/12 case**	D26

All available individual components for the PPC-04/2, PPC-06-plus and PPC-08-plus hydraulic testers, with their ordering codes, are listed below. They can be configured by the customer using this form. In the list, the components are sorted according to application areas/tasks to provide a better overview. For custom kits, please contact STAUFF.

* 0 ... 15 bar / 0 ... 210 PSI relative pressure at PPC-04/2
** Pressure peaks up to 1000 bar / 14500 PSI

All hydraulic testers and sensors are available in calibrated version. Please add -CAL to the order code.

Hydraulic Tester ▪ Type PPC Pad

Product Description

The application possibilities for hydraulics have recently increased throughout all areas of drive and control systems. This trend has been particularly noticeable in the sectors of machine, plant and automotive construction. At the same time, hydraulics and electronics have become increasingly intertwined.

STAUFF's new hand-held measuring instrument – the PPC Pad – helps you to deal with these new trends. It has never been so easy to follow the complex processes in these sectors with measurement, display and analysis.
Potential uses include preventative maintenance, commissioning, troubleshooting and machine optimization.
The expanded requirements of these modern applications (such as the increased number of measurement points, longer cable lengths and high noise immunity) have driven further development of the CAN bus.

STAUFF's CAN bus sensors now take advantage of the bus system's automatic sensor detection capability to provide an easy-to-install Plug & Play solution. Compatibility with existing diagnostic sensors is also provided.

Our proven storage strategy is focused on MIN and MAX value measurements. Combined with a wide variety of value presentation styles, these features make effective solutions-oriented analysis possible.

The PPC-Soft-plus PC software offers additional methods for analysis, control and remote maintenance using LAN and USB connections. Together with this software, the PPC Pad is a truly user-friendly measuring instrument that can be used for any type of diagnostics application.

Features

- Portable multi-function hand-held measuring instrument
- Pressure, temperature, flow and speed can be measured, monitored and analysed
- Measurement and display of over 50 channels
- Measured value display: numerical, bar graph, pointer, curve graph
- Project templates can be saved and loaded
- Interfaces: CAN, LAN, USB
- Total memory with up to 1 billion measured values
- Measured data can be (automatically) recorded, saved and analysed with the PPC-Soft-plus PC software and a LAN or USB connection

Scope of Delivery

- PPC Pad
- Installed Handle
- 24 V DC / 2,5 A power pack incl. country adaptor
- M8 x 1 / 4-Pin (digital in/out)
- USB 2.0 cable (2 m / 6.56 ft)
- LAN cable (5 m / 16.40 ft)
- Operating instructions
- PC Software
- 1 GB microSD-memory card
- M12 cable socket for 4 ... 20 mA / 0 ... 10 V aux.sensors

Technical Data

Please see page D32 for technical information.

Order Codes

PPC-Pad - 102 - CAL

① ② ③

① Series and Type

Hydraulic Tester	**PPC-Pad**

② Version

PPC-Pad-101	**101**
PPC-Pad-102	**102**
PPC-Pad-103	**103**

③ Calibration (only -102 / -103)

Without calibration certificate	**(none)**
With calibration certificate	**CAL**

Version Hydraulic Tester

Version	CAN-Sensor Inputs	Sensor Inputs with Sensor Recognition STAUFF (Analog)	Aux. Sensor Input (Analog)
PPC-Pad-101	2 networks each with 8 sensors max.	-	-
PPC-Pad-102		3	2
PPC-Pad-103		6	4

Hydraulic Tester ▪ Type PPC-Pad-SET

Content of case may differ

Order Codes

PPC-Pad - SET-101 - CAL

① ② ③

① Series and Type

Hydraulic Tester	**PPC-Pad**

② Version

PPC-Pad-SET-101	**SET-101**
PPC-Pad-SET-102	**SET-102**
PPC-Pad-SET-103	**SET-103**

③ Calibration (only -102 / -103)

Without calibration certificate	**(none)**
With calibration certificate	**CAL**

Scope of Delivery

- PPC Pad
- Installed Handle
- 24 V DC / 2,5 A power pack incl. country adaptor
- M8 x 1 / 4-Pin cable socket (digital in/out)
- USB 2.0 cable (2 m / 6.56 ft)
- LAN cable (5 m / 16.40 ft)
- Operating instructions
- PC Software
- 1 GB microSD-memory card
- Equipment case
- Neck strap
- CAN connection cable (5 m / 16.40 ft)
- 2x Terminating resistor
- Analog connection cable (3 m / 9.84 ft)
- M12 cable socket aux. output

Product Description

The PPC Pad is also available in a special designed case to store your unit and your accessories. The case is robust, lightweight and can be carried directly to your machine. It has individually designed inserts that can hold up to 4 pressure sensors, 1 CAN – flow turbine, 1 flow turbine, 1 frequency- and 1 aux-adapter. Cable and additional equipment also have their own place inside.

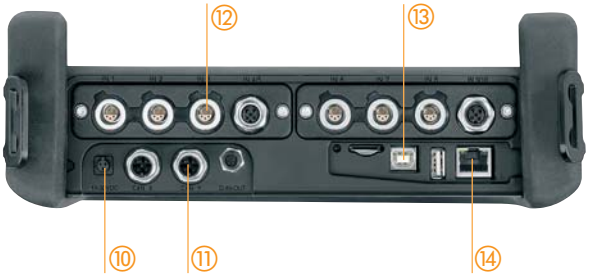
PPC Pad case is the best way to store and protect your equipment.

Standard PPC-Pad-SET kits have been put together to equip a user with the basic equipment needed for basic measurement.

Version Hydraulic Tester Set

Version	Hydraulic Tester	CAN-Sensor Inputs	Sensor Inputs with Sensor Recognition STAUFF (Analog)	Aux. Sensor Input (Analog)	Equipment Case	Neck Strap	CAN Connection Cable 5m /16.40 ft	Terminating Resistor	Analog Connection Cable 3m / 9.84ft	Aux. Sensor analog - Cable Adaptor
PPC-Pad-SET-101	**PPC-Pad-101**	2 networks each with 8 sensors max.	-	-	1	1	2	2	-	-
PPC-Pad-SET-102	**PPC-Pad-102**		3	2	1	1	2	2	2	1
PPC-Pad-SET-103	**PPC-Pad-103**		6	4	1	1	2	2	3	2

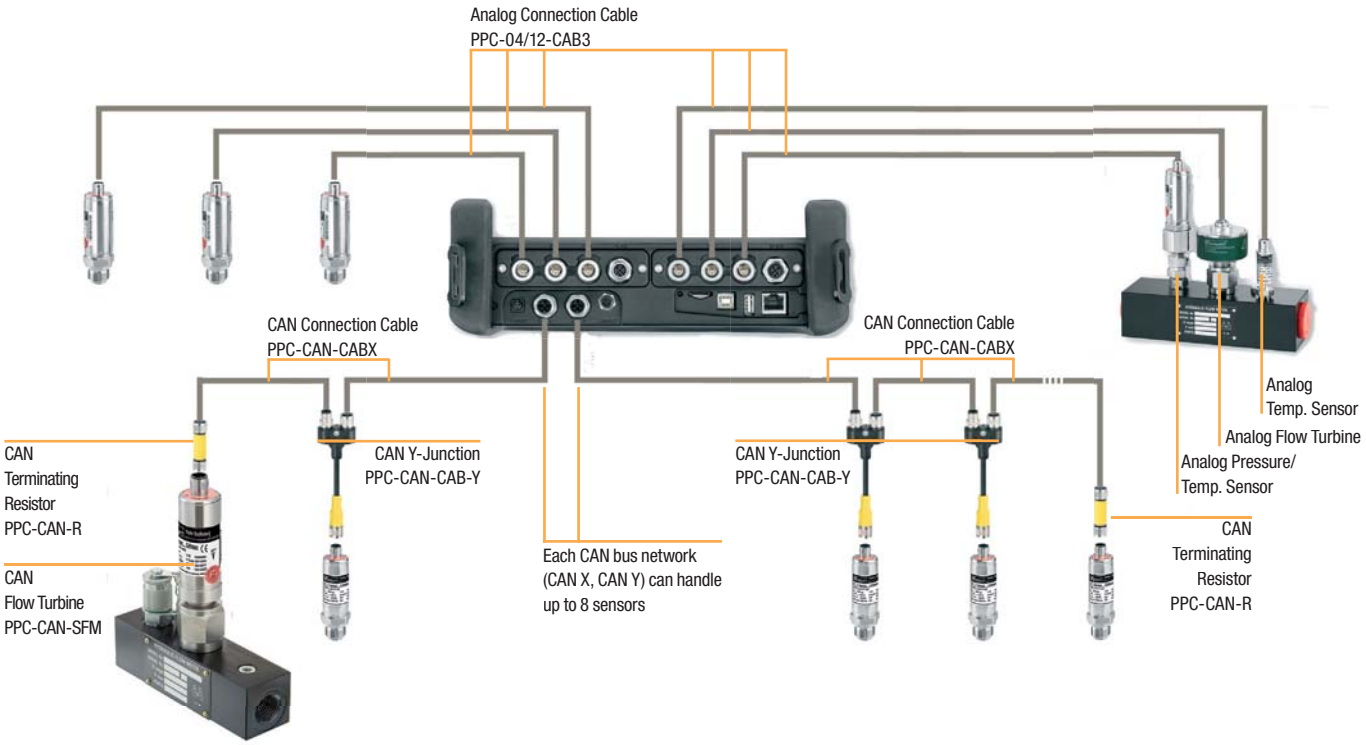
Hydraulic Tester ▪ Type PPC Pad



Function Specifications

① High protection from moisture and dirt due to cover caps and a rubber protective sleeve, Protection Class IP64
② Illuminated display for good readability in any situation
③ Protection of the housing, affording usage in tough enviroments and absorption of shocks
④ Big 5.7 in colour display for clearly viewing the extensive information
⑤ Intuitive operation due to clear-cut control elements and function-oriented keys
⑥ Ergonomic housing shape ensures convenient portability and long operating times
⑦ Large keyboard and fonts for easy operation and readability
⑧ Portabel multi-function hand-held measuring instrument - strong in design and tough in operation
⑨ Easy to carry and hang up with carrying strip
⑩ 110 / 240 V AC power supply, battery life 8 hours, recharging time 3 hours
⑪ 2 x CAN-busnetworks with each 16 channels
⑫ Modular design for up to 6 analog sensors or 2 Highspeed channels (0,1 ms) automatic sensor recognition
⑬ PC Interface (USB 2.0); ACT/MIN/MAX measured value transmission to the PPC-Soft-plus software, terminal for USB mass storage devices
⑭ LAN interface for remote monitoring, micro SD memory card for storage enlargement

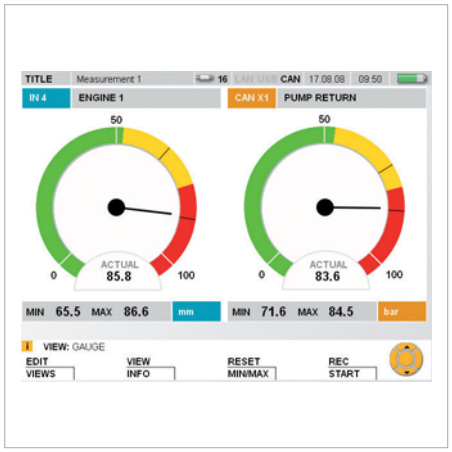
Connection of Analog Sensors / CAN Sensors



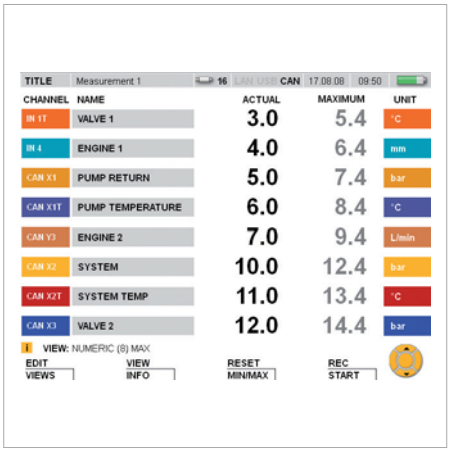
Hydraulic Tester ▪ PPC Pad Display

- Display of measured values as figures and bars
- Fixing of alarm ranges in green, yellow and red
- Trailing pointer function with MIN and MAX values

- Up to 4 channels in one large-format display
- Simultaneous display of ACT, MIN and MAX values
- Information lines of current settings, events and views
- Individual measurement channel identifier



- Large-area pointer display of measured values
- Trailing pointer for MIN and MAX values
- Alarm range in green, yellow and red
- Further channels can be called up with the arrow keys


TITLE Measurement 1 CAN 17.08.08 09:50
CHANNEL NAME ACTUAL MAXIMUM UNIT
IN 1T VALVE 1 3.0 5.4 °C
IN 4 ENGINE 1 4.0 6.4 mm
CAN X1 PUMP RETURN 5.0 7.4 bar
CAN X1T PUMP TEMPERATURE 6.0 8.4 °C
CAN Y3 ENGINE 2 7.0 9.4 L/min
CAN X2 SYSTEM 10.0 12.4 bar
CAN X2T SYSTEM TEMP 11.0 13.4 °C
CAN X3 VALVE 2 12.0 14.4 bar
VIEW: NUMERIC (8) MAX
EDIT VIEWS
VIEW INFO
RESET MIN/MAX
REC START

- Up to 8 channels in one display
- Colour allocation of the individual channels
- Uniform headings with measurement titels, sensors connected, interfaces, date, time and battery condition indicator
- Display can be changed between MIN and MAX values and full scale

- Up to 8 channels in one graph display
- Fine, precise graph image thanks to high definition display
- Choice between ACT and MIN/MAX value display
- Automatic and manual scaling of the time axis for optimum measured value display

Hydraulic Tester ▪ Type PPC Pad

Technical Data (General)

Materials
- Housing material: ABS/PC (Thermoplastic)
- Housing protective sleeve material: TPE (Thermoplastic Elastomer)
- Housing/Protective Sleeve (incl. in Standard Shipment)

Dimensions and Weight
- Dimensions (w x h x d): 257 x 74.5 x 181 mm/ 10.12 x 2.93 x 7.13 in
- Weight: 1550 g / 3.4 lbs (basic model)

Inputs / Outputs
- CAN sensor inputs: 2 CAN bus networks each with 8 sensors and max. 16 channels (for STAUFF CAN-Bus sensors) Scanning rate 1 ms = 1000 measured values/sec. M12x1 push-in connector, 5-Pin with SPEEDCON
- 1 digital trigger input: Scanning rate: 1 ms Input impedance: 1 kΩ Active high: >+7 … +24 V DC Active low: <1 V DC Isolated
- 1 digital trigger output: Scanning rate: 1 ms max. switching signal: +24 V DC/max. 20 mA Isolated
- Push-in connector for digital input and output: M8 x 1 / 4-Pin, male

Module Slots
- 2, for input module, flexible placement possible
- Slot 1 = IN1, IN2, IN3, IN4/5
- Slot 2 = IN6, IN7, IN8, IN9/10 (Expandable only by STAUFF)

Display
- FT-LCD colour graphic display
- Visible area: 115 x 86 mm/ 4.53 x 3.39 in
- Resolution: 640 x 480 pixels

Interfaces
- USB device: Online data transmission between unit and PC via PPC-Soft-plus Measured value transmission: ACT/MIN/MAX USB standard: 2.0, fullspeed Push-in connector: USB socket, shielded, type B
- USB host: Connection for mass storage devices such as USB stick or removeable hard disc Standard: 2.0, fullspeed, 100 mA max. Push-in connection: USB socket, shielded, type A
- Ethernet: Online data transmission between unit and PC via PPC-Soft-plus and remote control Measured value transmission: ACT/MIN/MAX Standard: 10, 100 Mbit/s, IEEE 802.3 (10/100 base T) Push-in connection: RJ45, socket, shielded

Functions
- Measurement: ACT, MIN and MAX values
- Measured value display: Numerical, bar graph, pointer, curve graph
- Measuring functions: Start/stop, points, trigger
- Trigger: Slope, manual, level, window, time, logic (interconnection of up to two events for the measurement start and stop)
- Pre-Trigger
- Remote operation via the Ethernet
- Acoustic notification at any incident

Measured Value Storage
- For storing measured values, project data and screen copies (screenshots)
- Storage capacity: ≤4 million measured values per measurement Total measured value storage >1 billion measured values
- Storage format: ACT/MIN/MAX
- Storage interval: 1 ms to 24 h
- Storage duration: 1 ms to 300 h (trigger measurement)
- Internal: 64 MB (approx. 32 million measured values)
- External SD storage: up to 2 GB (1 GB Micro SD memory card included in standard shipment) Slot: Micro SD memory card
- External USB mass storage device: up to 40 GB

Ambient Conditions
- Operating temperature: 0 °C … +50 °C / +32 °F ... +122 °F
- Storage temperature: -25 °C … +60 °C / -13 °F ... +140 °F
- Relative humidity: < 80 %
- Environmental test: IEC60068-2-32 (1 m, free fall)

Power Supply
- Internal: Lithium ion pack, +7.4 V DC / 4500 mAh Battery charging circuit/operating time with 3 CAN sensors: > 8 h

Protection Rating
- IP64 protection rating: Dust tight and protected against splashing water

Technical Data (for PPC-Pad-102 and 103)

Input with Sensor Recognition
- 3 or 6 sensor inputs (up to 6 or 12 analog measurement channels) with sensor recognition (p/T/Q/n) for PPC sensors
- Push-in connection: 5-Pin, push-pull, combination panel plug/socket
- Scanning rate: 1 ms = 1000 measured values/sec.
- For the PPC-04/12-PT combined pressure & temperature sensor, there is an additional temperature channel for each sensor input
- Temperature scanning rate: 1 s

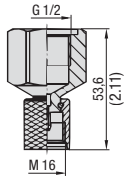
Inputs for Auxiliary Sensors
- 2 analog sensor inputs: for measuring current and voltage Scanning rate: 1 ms = 1000 measured values/sec. Voltage measuring range: -10 … +10 V DC (freely configurable) Current measuring range: 0/4…20 mA Supply external sensors: +18 … +24 V DC/max. 100 mA Push-in connection: M12x1, 5-Pin socket
- FAST mode: Scanning rate: 0.1 ms = 10000 measured values/sec. only one auxiliary sensor input is useable

Accuracy
- +0,02 % per °C

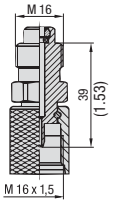
SPEEDCON is a trademark of PHOENIX CONTACT GmbH & Co. KG

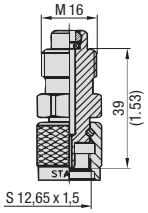
CAN Pressure Sensor ▪ Type PPC-CAN-PT

SDA20-G1/2-C6F

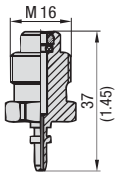


SAD20/15-P-C6F

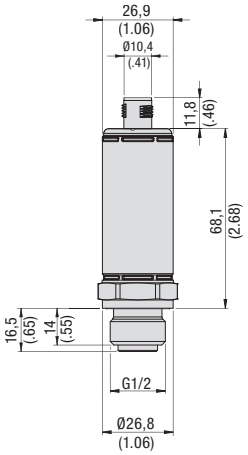




SAD20/12-P-C6F



SAD20/10-P-C6F



Connection Adaptors for PPC Pressure Sensors

In addition to the PPC-04/12-PT/2 Pressure Sensors, different adaptors and adaptor sets are available that not only connect to the STAUFF Test 20 system (SDA20-G1/2-C6F), but also to the test points of the STAUFF Test 15/12/10 series (SAD20/15-P-C6F, SAD20/12-P-C6F, SAD20/10-P-C6F).

For further information please see the STAUFF Test section.

Technical Data

- Sturdy Stainless Steel housing (1.4301)
- FPM (Viton®) gasket
- Sensor identification LED
- Weight: 200 g / .44 lbs
- Suitable for gases and liquids (in the case of aggressive media, only after consultation)
- 5-Pin SPEEDCON connection plug
- Pressure connection G1/2 (without adaptor)

Ambient Conditions

- Media temperature: max. 105 °C / 221 °F
- Ambient temperature: -25 °C ... 85 °C / -13 °F ... 185 °F
- Storage temperature: -25 °C ... 85 °C / -13 °F ... 185 °F
- Compensated range: 0 °C ... 85 °C / 32 °F ... 185 °F
- Load cycles (10^6): 100

CAN-open Interface

- Protocol: DS 301 v4.1, Type 2.0 A
- Profil: DS 404 v1.2
- Special functions: LSS to DS 305 V2.0

Electrical Data and Output

- Input voltage: 8 ... 40 V DC
- Current consumption: 25 mA at 24 V DC
- Response time: 1 ms

Product Description

The PPC-CAN-PT Pressure Sensors are specially designed for the use with the new hydraulic tester PPC Pad. These sensors are using the CAN-open protocol to transfer the measurement values to the PPC Pad.
Most technical details are the same as with the new generation of the PPC-04/12-PT sensors. These CAN sensors can also measure and display temperature on the PPC Pad.

The STAUFF Pressure Sensors are a reliable and flexible solution for the PPC series because of their sturdy stainless steel design, the quick response times (< 1 ms) and the high accuracy (±0,25 % FS* typ.) with automatic sensor recognition.

A further new feature is the LED signal light on the top of the sensor, that shows the status of the sensor.

Connecting the PPC-CAN-PT Pressure Sensor to the hydraulic tester PPC Pad a cable and a terminating resistor is needed.

Order Codes

PPC-CAN-PT - 016 - CAL

① ② ③

① Series and Type

CAN Pressure Sensor	**PPC-CAN-PT**

② Version

Please see table below

③ Calibration

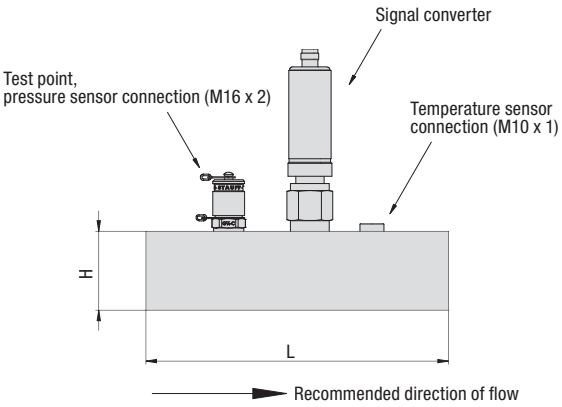
Without calibration certificate	**(none)**
With calibration certificate	**CAL**

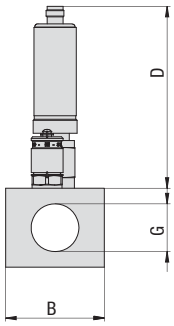
Pressure Ranges and Accuracies

Version	Pressure Ranges and Accuracies							
Sensor PPC-CAN-PT-	Pressure Measuring Range ($^{bar}/_{PSI}$)	Type of Measurement	Maximum Pressure ($^{bar}/_{PSI}$)	Burst Pressure ($^{bar}/_{PSI}$)	Accuracy (±% FS*) typ.	Accuracy (±% FS*) max.	Temperature Measuring Range (°C/°F)	Accuracy Temp. Sensor (±% FS*)
016	-1 ... 16	Relative pressure	32	150	0,25	0,5	-25 ... 105	±2K typ./
	-14.5 ... 232		464	2175			-13 ... 221	±3K max.
060	0 ... 60	Absolute pressure	120	500	0,25	0,5	-25 ... 105	±2K typ./
	0 ... 870		1740	7251			-13 ... 221	±3K max.
160	0 ... 160	Absolute pressure	320	900	0,25	0,5	-25 ... 105	±2K typ./
	0 ... 2320		4641	13053			-13 ... 221	±3K max.
400	0 ... 400	Absolute pressure	800	1200	0,25	0,5	-25 ... 105	±2K typ./
	0 ... 5801		11603	17404			-13 ... 221	±3K max.
600	0 ... 600	Absolute pressure	1200	1800	0,25	0,5	-25 ... 105	±2K typ./
	0 ... 8702		17404	26106			-13 ... 221	±3K max.
601	0 ... 600 **	Absolute pressure	1200	2500	0,25	0,5	-25 ... 105	±2K typ./
	0 ... 8702		17404	36259			-13 ... 221	±3K max.

* FS = Full Scale
** Pressure peaks up to 1000 bar / 14503 PSI
SPEEDCON is a trademark of PHOENIX CONTACT GmbH & Co. KG

CAN Flow Turbine ▪ Type PPC-CAN-SFM





Product Description

The PPC-CAN-SFM Flow Turbine is specially designed for the use with the new hydraulic tester PPC Pad and has to be installed permanently in the pipeline where the oil flow rotates the internal axial turbine. The generated frequencies are processed by digital electronics (a signal converter). Interferences caused by flow effects are compensated by this process. The signal converter is directly integrated into the PPC-CAN-SFM Flow Turbine. This allows even simpler operation and supports permanent coupling of the turbine and signal converter components that are matched to one another.
The new turbine also improves the response times/reaction times (from a previous 400 ms to 50 ms) and increases measurement accuracy.

The PPC-CAN-SFM Flow Turbine is available in five versions for various flow speeds. A pressure sensor (see page D33) can be connected in parallel to the flow turbine by the way of the integrated test point. In addition, the oil temperature can also be measured using the temperature sensor connection (see page D19).

In general, the PPC-CAN-SFM Flow Meter can handle flows in either direction. The specified technical data and the calibration (available as an option) apply only when the flow through the flow meter matches the recommended flow direction.
A double-headed arrow is shown on the nameplate of the PPC-CAN-SFM. The thicker end of the double-headed arrow specifies the recommended direction of flow.

Connecting the PPC-CAN-SFM Flow Meter to the hydraulic tester PPC Pad a cable and a terminating resistor is needed.

Technical Data

Materials
- Housing: Aluminium (black anodised)
- Gaskets: FPM (Viton®)
- 5-Pin SPEEDCON connection plug
- Pressure measurement connection: SMK20 (M16 x 2)
- Temperature measurement connection: M10 x 1 (standard screw plug)

Ambient Conditions
- Media temperature: -20 °C ... +90 °C / -4 °F ... +176 °F
- Ambient temperature: +10 °C ... +60 °C / +50 °F ... +140 °F
- Storage temperature: -20 °C ... +80 °C / -4 °F ... +176 °F
- Permissible particle size: < 10 Micron for SFM-015
  < 25 Micron for others
- Viscosity range: 10 ... 100 cSt

Electrical Data and Output
- Response time: 50 ms

Order Codes

PPC-CAN - SFM-015 - CAL
① ② ③

① Series and Type

CAN Flow Turbine	**PPC-04/12**

② Version

1 ... 15 l/min / .27 ... 3.90 US GPM	**SFM-015**
3 ... 60 l/min / .79 ... 15.90 US GPM	**SFM-060**
5 ... 150 l/min / 1.32 ... 39.60 US GPM	**SFM-150**
8 ... 300 l/min / 2.11 ... 79.00 US GPM	**SFM-300**
15 ... 600 l/min / 3.96 ... 158.00 US GPM	**SFM-300**

③ Calibration

Without calibration certificate	**(none)**
With calibration certificate	**CAL**

Dimensions and Measuring Range

Version	Measuring Range						Dimension (mm/in)						
Flow Turbine PPC-CAN-	Measuring Range (l/min / US GPM)	Max. Flow (l/min / US GPM)	Operarting Pressure (bar / PSI)	Max. Pressure (bar / PSI)	Accuracy (at 21 cSt)	Max. Pressure Drop (at FS*) (bar / PSI)	G ** (BSP)	G (UNF)	B	D	L	H	Weight (g / lbs)
SFM-015	1 ... 15	16,5	350	420	±1(% FS*)	1,5	G1/2	3/4–16	36,9	78,1	136	36,9	650
	.26 ... 3.90	4.4	5076	6091		21.8			1.45	3.07	5.35	1.45	1.43
SFM-060	3 ... 60	66	350	420	±1(% of the displayed value)	1,5	G3/4	1-1/16–16	62	80,4	190	49,6	750
	.79 ... 15.90	17.4	5076	6091		21.8			2.44	3.17	7.48	1.95	1.65
SFM-150	5 ... 150	165	350	420	±1(% of the displayed value)	1,5	G3/4	1-1/16–16	62	80,4	190	49,6	750
	1.32 ... 39.60	43.6	5076	6091		21.8			2.44	3.17	7.48	1.95	1.65
SFM-300	8 ... 300	330	350	420	±1(% of the displayed value)	4	G1	1-5/16–16	62	84,4	190	49,6	1200
	2.11 ... 79.00	87.2	5076	6091		58			2.44	3.32	7.48	1.95	2.65
SFM-600	15 ... 600	660	290	348	±1(% of the displayed value)	5	G1-1/4	1-5/8–12	62	74	212	75	1800
	3.96 ... 158.00	174.4	4206	5047		72.5			2.44	2.91	8.35	2.95	3.97

* FS = Full Scale
** Standard option
SPEEDCON is a trademark of PHOENIX CONTACT GmbH & Co. KG
Dimensional drawings: All dimensions in mm (in).

Different CAN Connection Cables

Various cables are available to connect the CAN sensors and the CAN flow turbine to the PPC Pad. The CAN sensors work on a bus system as displayed in the connection overview on page D30. There are cables in length from 0,5 m / 1.64 ft and 20 m / 65.65 ft available. To connect a new sensor to the CAN bus, a Y-splitter cable is necessary.

Each sensor on the end of a CAN bus has to be closed with a terminating resistor. The resistor is also necessary when only one sensor is used. All connections are 5-Pin SPEEDCON connection plugs.

- Compact size
- Interference-free
- Compatible with all PPC-CAN sensors and diagnostic measuring instruments
- Push-Pull plug
- Various lengths available
- Oil-resistant material

CAN Connection Cable ▪ Type PPC-CAN-CAB

Y-Splitter ▪ Type PPC-CAN-CAB-Y

CAN Terminating Resistor ▪ Type PPC-CAN-R

Order Codes

PPC-CAN - CAB2

① ②

① Series and Type

CAN Connection Cable	**PPC-CAN**

② Length

0,5 m / 1.64 ft connection cable	**CAB0.5**
2 m / 6.65 ft connection cable	**CAB2**
5 m / 16.40 ft connection cable	**CAB5**
10 m / 32.81 ft connection cable	**CAB10**
20 m / 65.62 ft connection cable	**CAB20**

Order Code

PPC-CAN-CAB-Y

①

① Series and Type

Y-Splitter incl. 0,3 m / .98 ft	**PPC-CAN-CAB-Y**

Order Code

PPC-CAN-R

①

① Series and Type

CAN Terminating Resistor	**PPC-CAN-R**

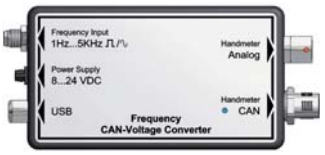
CAN Frequency Converter

Product Description

Measuring Frequency with PPC-CAN-FR
The PPC-CAN-FR can be used to connect frequency signals (for example, from turbines, flow counters or tachometers) to the PPC Pad.
The instruments can process sinus and rectangle signals from 1 Hz to 5 KHz with signal amplitude from 20 mV to 10 V. Configuration is possible via USB and PC software.

Power Supply for the External Sensor
An external sensor can be supplied with 24 V using the PPC-CAN-FR.

Analog or CAN Output
The PPC-CAN-FR can be connected either to an analog input or a CAN input.



Frequency Converter PPC-CAN-FR

Order Code

PPC-CAN-FR

①

① Series and Type

Frequency Converter	**PPC-CAN-FR**

Technical Data

Dimensions
- 114 x 64 x 26 mm / 4.49 x 2.52 x 1.02 in

Ambient Conditions
- Operating temperature: 0 °C ... +60 °C / +32 °F ... +140 °F
- Storage temperaure: -25 °C ... +70 °C / -13 °F ... +158 °F
- Rel. humidity: < 80 %

Electrical Data and Output
- Measuring range: 1 Hz ... 5 KHz
  Sinus and rectangle signals
  40 mVpp ... 10 V pp
- Sensor power supply: 24 V DC ± 0,5 V DC
- $I_{Out\ (Max.)}$ without power supply: 50 mA
- $I_{Out\ (Max.)}$ with power supply at 24 V DC: 100 mA
- Accuracy: ±1 % FS* ±0,05 %/ °C

Power Supply
- Power supply (external): 8 ... 24 V DC

Electrical Connections
- Sensor: 4-Pin, M8, plug (Female with screw-in connections included with delivery)
- External power supply: 3-Pin, female
- USB: 4-Pin, female
- Analog: 5-Pin, female
- CAN: 5-Pin, M12

* FS = Full Scale
SPEEDCON is a trademark of PHOENIX CONTACT GmbH & Co. KG

CAN Hydraulic Test Equipment

All available individual components for the PPC Pad hydraulic tester, with their ordering codes, are listed below. They can be configured by the customer using this form. In the list, the components are sorted according to application areas/tasks to provide a better overview. For custom kits, please contact STAUFF.

** Pressure peaks up to 1000 bar / 14500 PSI

All hydraulic testers (not PPC-Pad-101) and sensors are available in calibrated version. Please add -CAL to the order code.

Group	Description	Order Codes	Page
1. Hydraulic Tester PPC-Pad	Hydraulic Tester PPC-Pad-101 with 2 CAN Networks, incl. Accessories	**PPC-Pad-101**	D28
	Hydraulic Tester PPC-Pad-102 with 2 CAN Networks and 3 Analog Sensor Inputs, incl. Accessories	**PPC-Pad-102**	D28
	Hydraulic Tester PPC-Pad-103 with 2 CAN Networks and 6 Analog Sensor Inputs, incl. Accessories	**PPC-Pad-103**	D28
2. Hydraulic Tester PPC-Pad-SET	Hydraulic Tester PPC-Pad-SET-101 with 2 CAN Networks, incl. Accessories, in Case with Cables	**PPC-Pad-SET-101**	D29
	Hydraulic Tester PPC-Pad-SET-102 with 2 CAN Networks and 3 Analog Sensor Inputs, incl. Accessories, in Case with Cables	**PPC-Pad-SET-102**	D29
	Hydraulic Tester PPC-Pad-SET-103 with 2 CAN Networks and 6 Analog Sensor Inputs, incl. Accessories, in Case with Cables	**PPC-Pad-SET-103**	D29
3. Pressure Measurement (for connecting and extension cables for Measuring Transmitters, see point 6)	**Pressure Transmitter G 1/2** (without Connecting Cable) **for CAN Networks**		
	Pressure range from -1 ... 16 bar / -14.5 ... 232 PSI relative pressure	**PPC-CAN-PT-016**	D33
	Pressure range from 0 ... 60 bar / 0 ... 870 PSI absolute pressure	**PPC-CAN-PT-060**	D33
	Pressure range from 0 ... 160 bar / 0 ... 2321 PSI absolute pressure	**PPC-CAN-PT-150**	D33
	Pressure range from 0 ... 400 bar / 0 ... 5801 PSI absolute pressure	**PPC-CAN-PT-400**	D33
	Pressure range from 0 ... 600 bar / 0 ... 8702 PSI absolute pressure	**PPC-CAN-PT-600**	D33
	Pressure range from 0 ... 600 bar / 0 ... 8702 PSI absolute pressure **	**PPC-CAN-PT-601**	D33
	Connection Adaptors		
	Adaptor G 1/2 to M16 x 2 (STAUFF Test 20)	**SDA20-G1/2-C6F**	D33
	Adaptor M 16 x 2 to M16 x 1,5 (STAUFF Test 20 to STAUFF Test 15)	**SAD20/15-P-C6F**	D33
	Adaptor M 16 x 2 to S12,65 x 1,5 (STAUFF Test 20 to STAUFF Test 12)	**SAD20/12-P-C6F**	D33
	Adaptor M 16 x 2 to plug-in (STAUFF Test 20 to STAUFF Test 10)	**SAD20/10-P-C6F**	D33
4. Flow Measurement (for connecting and extension cables for measuring transmitters, see point 6)	**SFM Flow Meters with Integrated Signal Converter**		
	Measuring range from 1 ... 15 l/min / .3 ... 3.9 US GPM	**PPC-CAN-SFM-015**	D34
	Measuring range from 4 ... 60 l/min / 1 ... 15.9 US GPM	**PPC-CAN-SFM-060**	D34
	Measuring range from 6 ... 150 l/min / 1.6 ... 39.6 US GPM	**PPC-CAN-SFM-150**	D34
	Measuring range from 10 ... 300 l/min / 2.7 ... 79 US GPM	**PPC-CAN-SFM-300**	D34
	Measuring range from 20 ... 600 l/min / 5.3 ... 158 US GPM	**PPC-CAN-SFM-600**	D34
5. Miscellaneous measurements	Frequency Converter (PPC-Pad only)	**PPC-CAN-FR**	D35
6. Connecting Cables for Measuring Transmitters with CAN Connection for CAN Networks	Connecting Cable 0,5 m / 1.64 ft CAN Connection	**PPC-CAN-CAB0.5**	D35
	Connecting Cable 2 m / 6.65 ft CAN Connection	**PPC-CAN-CAB2**	D35
	Connecting Cable 5 m / 16.40 ft CAN Connection	**PPC-CAN-CAB5**	D35
	Connecting Cable 10 m / 32.81 ft CAN Connection	**PPC-CAN-CAB10**	D35
	Connecting Cable 10 m / 65.62 ft CAN Connection	**PPC-CAN-CAB20**	D35
	Y-splitter incl. 0,3 / .98 ft CAN Connection	**PPC-CAN-CAB-Y**	D35
	CAN Terminating Resistor	**PPC-CAN-R**	D35
7. PC Connection and Software	PC Software and PC Adaptor for PPC-04/2 (RS-232 connection)	**PC-SET PPC-04-SW-CAB**	D35
	PC Software and USB Connection lead for PPC-06/08-plus	**PC-SET PPC-06/08-plus-SW-CAB**	D35
	Adaptor Cabel RS-232 to USB for PPC	**PPC-04/12-RS232-to-USB-CAB**	D35
8. Accessories and Spare Parts	PPC-Pad Case (with individual insert)	**PPC-Pad case**	D29